2009 Anchor Cable Replacement

The new cable is pulled through the anchor yoke as the old cable is being wound on to a spool on the barge. May 2005

Jewelry being clamped into place. May 2005

The Hood Canal Bridge anchor cables connect the bridge to large, concrete, bowl-shaped anchors underwater.

The new east-half anchors built in 2006-2007 will be connected to the new east-half pontoons after the pontoons are installed at the bridge in May-June 2009. Because the new anchors are placed farther away from the bridge than the current east-half anchors, longer and thicker anchor cables will be installed.

Anchor Cable Quick Facts

Total length = 64,400 feet, more than 12 miles

Diameter = 3”

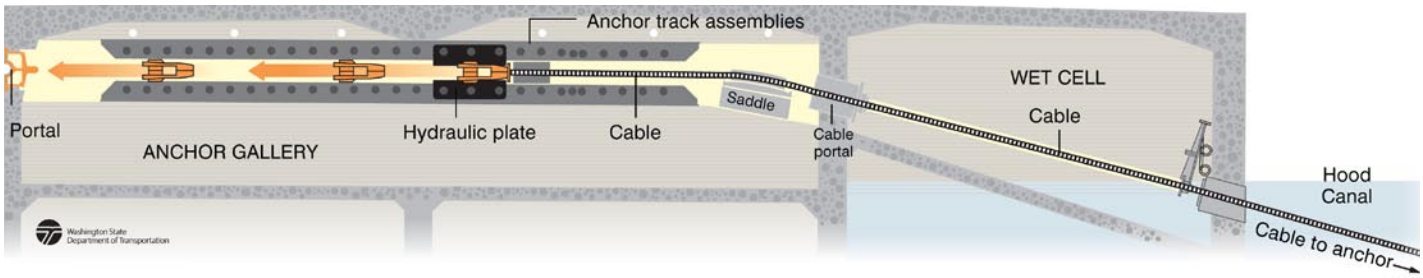
Material used = steel

Total weight = 620 tons

Anchor Cable Replacement Process

Below are the steps for installing the three-inch diameter cables through the anchors and connecting them to the pontoons.

1. Retrieve messenger cable that temporarily runs through the pipe around the anchors that are at the bottom of Hood Canal.
2. Attach the new cable to the messenger cable.
3. Wind messenger cable on to a spool on a barge.
4. Locate the center of the new cable and clamp large metal beads, or “jewelry,” over the cable. This jewelry keeps the cable from rubbing on the concrete anchor and being worn down.
5. Verify the correct location of the jewelry with an underwater camera and let out new cable from the anchor to the pontoon.
6. Bring the anchor cable ends through the “wet cell” of the pontoon – a cell that allows the cable to enter the pontoon while keeping water out of the main pontoon cells.
7. Clamp the anchor cables into place inside the anchor gallery (see graphic below).
8. Tighten anchor cables on both the north and south sides of the bridge.
9. Put gaskets and watertight fixtures into place.



Areal view of a segmented cross section of Hood Canal Bridge

Anchor gallery: *area where the anchor cables connect to the pontoons after the cables are secured around the anchors*

Portals: *allow for installation and tensioning of cables*

Hydraulic plate: *moves forward and backward to adjust the anchor cable tension*

Anchor track: *distributes the load, or weight, from the cable into the pontoons*

Saddle: *provides a smooth transition for the three inch cable as it passes into the wet cell*

Cathotic protection: *protects the anchor cables from corrosion in a saltwater environment*

Wet cell: *allows the anchor cable to enter the pontoon while preventing water from getting inside the main portion of the pontoon*